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ABSTRACT

This study determined if students have a better understanding of the components of interdependence when they use instructional materials which emphasize a systems approach, when they work cooperatively in a group, and when the classroom environment fosters both of the above variables. For the purpose of this study, a working definition of interdependence was developed. Students with a working definition of interdependence comprehend the concept of systems, view the world as being comprised of systems, and value working cooperatively. Three hypotheses are that there will be a significant effect on students learning the concept of interdependence when a sequenced unit on interdependence is taught, when students engage in a cooperative interdependent learning process, and when the above systems approach curriculum is taught in a cooperative environment. Four sixth-grade social studies classes in a city school composed of randomly assigned students and teachers took part in this study. Two experimental groups studied materials focusing on a systems interdependence approach published by the Center for Global Perspectives; two control groups studied a traditional social studies textbook published by Laidlaw. Two classes worked in cooperative groups, while students in the other two classes worked individually. Also, variables described above were combined in classes (i.e., a systems approach was taught in both a cooperative and noncooperative environment). Four tests were administered to students to measure their understanding of interdependence, preferences for a cooperative or individualistic study environment, and their ethnocentrism. Results obtained in the study support the content, cooperative, and interaction hypotheses. (Detailed limitations, conclusions, and implications are provided.) (NE)

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LEARNING THE CONCEPT OF INTERDEPENDENCE:

A STUDY IN TWO DIMENSIONS

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LEARNING THE CONCEPT OF INTERDEPENDENCE:

A STUDY IN TWO DIMENSIONS

ABSTRACT

Global education is an emphasis in social studies that is receiving more and more attention as schools enter the closing decades of the 20th century. The study reported here grew out of an interest in global education and the perceived need for a better definition of its component parts. This study used selected curricular materials in combination with classroom goal structures in an examination of these two instructional strategies on the attainment of the concept of interdependence. The primary purposes of the study were to define this concept in a teachable, measurable and applicable way and to determine which combination of the variables mentioned above had the greatest positive effect on student cognitive and affective growth with respect to certain measures of interdependence.

Global education is an emphasis in social studies that is receiving more and more attention as schools enter the closing decades of the 20th century. Discussion of a need for a global perspective in education often centers around the phenomenon of a shrinking world. While this writer acknowledges the effects of satellite communications, microprocessing and supersonic transport, we need to recognize that for all the shrinkage in time and space there exists a concomitant expansion in the potential for human interaction that cuts across time, space and cultural norms. It is precisely this feature of the world in which we live -- the expansion of interdependent relations -- that makes the teaching of global perspectives one of the educational imperatives of our time. The study reported here grew out of an interest in global education and the perceived need for a better definition of its component parts.

Little empirical research has been conducted in this area. Most efforts to date have focused on the theoretical and conceptual development of the field. Several writers have discussed skills and concepts required of students and teachers in order to achieve a global perspective (Anderson, 1979; Becker, 1979; Cogan, 1978; Hanvey, 1975; Jongewaard, 1978; King, 1976; Kinghorn, 1979; Remy, et al., 1975). What emerges from these writings is a set of

common expectations and ideologies that form a core around which the field of global studies is constructed. And at the center of this core is the concept of interdependence.

Earlier related research (Lambert and Klineberg, 1967; Torney and Morris, 1972; Jahoda, 1962; Piaget and Weil, 1951) investigated certain aspects of developmental readiness, establishing an age range from 10-14 as the ideal time for teaching political attitudes and worldmindedness. Later research, such as studies by Berg (1971), Schmidt (1975) and Mitsakos (1976, 1979) focused on various broad interpretations of a global perspective, dealing primarily with some aspect of student attitudes. These are the studies that combine to form the theoretical basis for the study being reported here. What distinguishes this study from its predecessors, however, is its specific and singular focus on interdependence as one of the key components in the global education formula.

Curiously, although the concept is consistently mentioned, little time is spent defining interdependence beyond subgeneralized a description as mutual dependence.

✓ The purpose of this study thus became to define interdependence in a teachable, measurable and applicable way. Furthermore, this definition was to be rather specific to the social studies, thereby requiring the two-dimensional emphasis of a scientific or technical definition of interdependence coupled with a more ideological definition. This dual focus allowed for an explicit, factual understanding of

interdependence while at the same time providing an action component that accounted for the values-biased human interaction aspects of social studies education.

The definition which resulted centers around systems and systems interaction. The simplest of systems is a microcosm of interdependence. Thus, the definition of a student with a working knowledge of interdependence is a student who:

- (1) understands what a system is and how it operates,
- (2) views the world as being composed of several distinct but interrelated natural and social (biosocial) systems,
- (3) values working collectively as part of a system to solve problems and to achieve goals, and
- (4) understands that one's decisions and actions often lead to unanticipated consequences that ramify over time.

These four components reflect the intention to create a definition that is teachable, measurable and applicable. The first component represents a kind of factual base upon which to build the rest of the definition. The second component represents a level of comprehension and application which provides the student with a systems view of how the world operates. The third component provides for the development of a values position relative to working as part of this world of systems, specifically as it relates

to working with other people. Finally, as an extension of and combination of the first three, the fourth component calls for the synthesis of one's knowledge of systems interdependence and the evaluation of the consequences of one's actions within this systems context.

Statement of the Problem

This study used selected curricular materials in combination with classroom goal structures in an examination of the effects of these two instructions strategies on the attainment of the concept of interdependence. The primary purposes of the study were to define this concept in a teachable, measurable and applicable way and to determine which combination of the variables mentioned above had the greatest positive effect on student cognitive and affective growth with respect to certain measures of interdependence.

Design

The design of the study involved the application of various treatments to four sixth grade social studies classes composed of randomly assigned students and teachers. The study incorporated a two-by-two factorial design of the posttest-only-control-group type. The first independent variable consisted of a four-week experimental unit adapted by the investigator primarily from materials published

by the Center for Global Perspectives. The control unit was taken from Unit 8 of the Laidlaw Social Studies series (1979). The second independent variable was that of classroom goal structures. Two approaches were selected--individualistic ✓ and cooperative. Adapted from models developed by Johnson and Johnson (1975), two classes worked in cooperative groups ✓ and two worked individualistically. The resultant four conditions are shown in figure one, below:

INSERT Table 1 about here

Students were randomly assigned to treatments from the entire sixth grade population of an urban, upper-elementary ✓ school, resulting in four conditions of approximately 25 students each. Teachers were randomly assigned to curriculum content groups and in a second random drawing were assigned either to the cooperative or individualistic goal structures. While complete rotation of teachers through all four conditions was considered more empirically correct, what was viewed as a more real-world approach was taken. Teachers were kept in their original content areas, but were rotated once at the mid-way point in the study so that each teacher experienced both goal structures, while at the same time maintaining continuity in terms of content. This was seen as an acceptable alternative which served to mediate some of the inevitable teacher biases and yet, as mentioned

TABLE 1
RESEARCH DESIGN

		Goal Structure	
		Individualistic	Cooperative
Curriculum	Systems	1.1	1.2
	Laidlaw	2.1	2.2

above, allowed for a more natural content flow.

Each resultant condition employed some combination of the independent variables described above. Condition 1.1 combined an individualistic goal structure with the systems curriculum. In this setting students worked alone under the close supervision of the assigned teacher. Students completed a series of lessons using the experimental curriculum while working individually. Condition 1.2 engaged students in the same experimental curriculum. However, students completed assignments as part of a cooperative group. Condition 2.1 was in effect the control group in the study. Students worked alone under close teacher supervision. In addition, students used the highly structured Laidlaw material. Condition 2.2 coupled the standard Laidlaw curriculum with a cooperative goal structure. This allowed the investigator to isolate the cooperative goal structure to determine whether it had a singular effect on student performance with respect to the various measures of interdependence employed in the study.

Methodology: Curriculum and Goal Structures

The first independent variable to be considered is curricular content. The experimental unit focused on the theme of systems and systems interdependence. Materials published by the Center for Global Perspectives provided the majority of materials. Sources included volume 71 ✓

of *Intercom* magazine (1972), volumes 84 and 85 (combined issue) of *Intercom* (1976), and "Interdependence: Number One in a Series of K-12 Guides," Part A, K-3, and Part B, 4-6 (King, 1976).

These lessons were sequenced by the investigator into 20 days of instruction ranging from manipulation of simple systems (e.g., puzzles, spool toys, flashlights) to more complex systems activities (e.g., tracing home water supplies back through the rain cycle, analyzing world systems coming together in a chocolate bar). The unit culminated in several days of participation in a simulation activity titled "Terra II."

INSERT Table 2 about here

✓ The control unit was selected from the regular classroom social studies textbook series (Laidlaw, 1979). Students followed Unit 8, which consisted of a fairly traditional treatment of the causes and resolutions of World War I, the Great Depression and World War II. This unit was used because it had an appropriately international focus and therefore contained some potential for effecting its own move towards a global perspective. However, two critical factors not explicitly present were any mention of systems or of interdependence. Thus, the rationale behind seeking some content equivalency between the two

TABLE 2

EXPERIMENTAL UNIT OUTLINE
"SYSTEMS INTERDEPENDENCE"

Week One:

Day	1	Puzzle Systems
	2	Spool Toy Systems
	3	Machines Role Play
	4	Systems Identification
	5	Murals Activity

Week Two:

Day	1	Journeys: Nellie Bly
	2	Journeys: Yankee Clipper
	3	Water Faucet Systems
	4	Street Corner Systems
	5	Street Corner Systems

Week Three:

Day	1	Chocolate Bar Systems
	2	Chocolate Bar Systems
	3	Simulation: Terra II
	4	Simulation: Terra II
	5	Simulation: Terra II

Week Four:

Day	1	Simulation: Terra II
	2	Simulation: Terra II
	3	Simulation: Terra II
	4	Simulation: Terra II
	5	Testing Session I

Week Five:

Testing Session II

units was to more critically examine the effects of the experimental conditions.

In all cases, teachers were provided with specific, daily lesson protocols. Students were provided with answer sheets for each lesson. Supplemental instructional materials were supplied as well, such as crossword puzzles, word search puzzles, maps, movies and other follow-up activities. All of these protocols, answer sheets and supplemental materials were developed by the investigator in an effort to provide some control over teacher and student variability, both in terms of content and in terms of the goal structures discussed below.

The second independent variable was that of classroom goal structures. Two approaches were selected - individualistic and cooperative. As mentioned earlier, two classes worked in cooperative groups, while the other two had students working individually. According to the Johnson models, a cooperative goal structure exists when students perceive they can obtain their goal if and only if the other students with whom they are linked can obtain their goal. An individualistic goal structure exists when achievement of the goal by one student is unrelated to the achievement of the goal by other students.

In the literature generated by goal structures research, cooperative work groups, as defined above, are seen to have an inherent "interdependency" feature (Nelson

and Kagan, 1972). This interdependence component is further defined as a "mutual causation" awareness, that is to say, one must perceive the connections between people, their actions and decisions, and the resulting consequences (Johnson and Johnson, 1975). This interdependency, the ability to understand how a situation appears to another person and how that person is reacting both cognitively and emotionally to a situation, is seen to be enhanced through the use of cooperative goal structures (Bridgeman, 1977; Johnson and Johnson, 1978; D. W. Johnson, et al., 1981).

Thus, the two dimensions of the study were defined and implemented. The independent variable of curriculum content focused primarily on the first two components of the definition of the interdependence, while the goal structures variable focused mainly on the human interaction components. The study lasted four weeks with students actually in condition for 18 days. This resulted in a net treatment of 15 hours. Tests were administered by each teacher to their initial group of randomly assigned students. Again specific protocols were supplied each teacher so as to minimize any variance in testing conditions. The experimenter conducted a follow-up test session four school days later to accommodate those students who had missed the first session.

Analysis

Given the design of the study and given the curricular

and pedagogical components outlined above, three hypotheses emerged which served to focus the investigation:

1. A sequenced, four-week unit centered around the theme of systems interdependence will have a significant effect on student learning of the concept of interdependence, as that term is defined in the study.
2. The structuring of cooperative groups, in effect engaging students in a cooperatively interdependent learning process, will have a significant effect on student learning of the concept of interdependence, as defined in this study.
3. There will be a significant interaction effect between the systems curriculum and the cooperative goal structures, as indicated by student learning of the concept of interdependence, as defined in this study.

Four dependent variables were used to test the effects of the various treatments. The first, Measures of Interdependence, was a 35-item multiple choice criterion measure developed by the investigator specifically for this study. Items were taken mainly from the daily lessons in the experimental unit. These items were grouped more or less equally around the four component parts of the definition of interdependence. While this division was seen to create four subscales within the test, later analysis failed to support that subdivision. The test was piloted,

however, using two fifth grade classrooms. One class received approximately two weeks of instruction from the experimental unit while the other served as a control group. The resultant class means are displayed in Table 3 below:

INSERT Table 3 about here

A post-hoc reliability check on this test yielded an overall α coefficient of .733. These preliminary validity and reliability checks were considered sufficient to warrant the use of this test as one of the two primary measures of the study.

The other primary test, Classroom Life, was developed by David and Roger Johnson (1976) to check students' preferences for the three goal structures - cooperative, competitive and individualistic. Students responded to 22 items on a five-point Likert scale. The reliability check for the two subscales of this test which were used in the study produced overall α coefficients of .795 (cooperative) and .776 (individualistic). ✓

Dependent variables (3) and (4), both developed by Mitsakos (1976), were seen as secondary or complementary tests. Agree/Disagree was a 15-item measure of student ethnocentrism. Students responded to items such as "talking things over with another country is better than fighting" on a seven-point Likert scale. An overall α coefficient ✓

TABLE 3
MEASURES OF INTERDEPENDENCE:
PILOT STUDY CLASS MEANS

Experimental Class	Control Class
$\bar{X} = 22.0$	$\bar{X} = 17.0$
N = 25	N = 26

of .799 indicated an acceptable degree of reliability. People Pictures had students select a list of descriptors from a scatter inventory of descriptive words for each of 12 pictures of people from four representative reference groups (African, Chinese, German, American). Descriptors fell into one of three subscales - favorable, general or unfavorable. Test-retest reliability coefficients from an earlier study were used and were .950 (favorable), .895 (general) and .929 (unfavorable). These data were taken from the NAESP Global Education Project (1979).

Findings

A two-way analysis of variance was run on the dependent measures described above. Significant differences in main effects means were found within three of the four dependent variables. In addition, three interactions were found. Follow-up t-tests on cell means found the interactions to be caused by significant differences between groups in the experimental curriculum.

Hypothesis (1) states: "A sequenced, four-week unit centered around the theme of systems interdependence will have a significant effect on student learning of the concept of interdependence, as defined in this study."

Results obtained in the study support this content hypothesis. The Measures of Interdependence test yielded an F-ratio significant at the .01 level (.002) in favor of the systems

content. Both subscales of the Classroom Life test were significant at the .05 level (.023, .025) in favor of the experimental unit.

INSERT TABLES 4, 5 and 6 about here

Hypothesis (2) states: "The structuring of cooperative groups, in effect engaging students in a cooperatively interdependent learning process, will have a significant effect on student learning of the concept of interdependence, as defined in this study." This group effects hypothesis received support from data obtained in the study. The cooperative subscale of Classroom Life yielded an F-ratio significant at the .05 level (.052) in favor of the cooperative goal structures (see Table 5 above). Item (11) from the Agree/Disagree test produced an F-ratio significant at the .01 level (.006) in favor of cooperative groups. That item read:

"Talking things over with another country is better than fighting."

Cell means in the People Pictures unfavorable subscale indicated students in the two cooperatively grouped conditions used fewer unfavorable descriptors.

TABLE 4

MEASURES OF INTERDEPENDENCE
TWO-WAY ANALYSIS OF VARIANCE
GROUP BY CONTENT

Source of Variation	DF	Sum of Squares	Mean Squares	F-ratio	F Prob.
Group	1	8.152	8.152	.341	.561
Content	1	238.639	238.639	9.983	.002
Group x Content	1	9.258	9.258	.387	.536
Residual	78	1864.508	23.904		
Total	81	2128.305	26.275		

TABLE 5

CLASSROOM LIFE: COOPERATIVE
TWO-WAY ANALYSIS OF VARIANCE*
GROUP BY CONTENT

Source of Variation	DF	Sum of Squares	Mean Squares	F-ratio	F Prob.
Group	1	37987.276	37987.276	3.909	.052
Content	1	52060.276	52060.276	5.357	.023
Group x Content	1	58135.149	58135.149	5.983	.017
Residual	78	757955.455	9717.378		
Total	81	913108.598	1172.946		

*ANOVA procedure using scale item means expressed as three-digit whole numbers.

TABLE 6

CLASSROOM LIFE: INDIVIDUALISTIC
TWO-WAY ANALYSIS OF VARIANCE*
GROUP BY CONTENT

Source of Variation	DF	Sum of Squares	Mean Squares	F-ratio	F Prob.
Group	1	2835.029	2935.029	.160	.691
Content	1	96586.457	96587.457	5.253	.025
Group x Content	1	103580.447	103580.447	5.634	.020
Residual	78	1434073.096	18385.553		
Total	81	1640160.976	20248.901		

*ANOVA procedure using scale item means expressed as three-digit whole numbers.

INSERT Tables 7 & 8 about here

Hypothesis (3) states: "There will be a significant interaction effect between the systems curriculum and the cooperative goal structures, as indicated by student learning of the concept of interdependence, as defined in this study. This interaction hypothesis is also supported by data obtained in the study. The cooperative subscale of Classroom Life produced an interaction F-ratio significant at the .05 level (.017). A t-test of cell means within the two curriculum contents revealed a significant difference (two-tailed probability = .003) between the means in the systems content, the highest mean being found in the group in condition 1.2 who studied systems while grouped cooperatively. The individualistic subscale showed similar results with a significant difference in means of the systems groups (two-tailed probability = .029). This hypothesis received additional support from a similar interaction in the two-way analysis of variance of the general subscale of the People Pictures test. These data yielded an interaction F-ratio of .063. A review of cell means revealed condition 1.2 with the highest mean score. Again, the interaction appears to have occurred as the result of a substantial shift in scores between those students in the systems content who were grouped individualistically and those who were grouped cooperatively.

TABLE 7

AGREE/DISAGREE: ITEM (11)
TWO-WAY ANALYSIS OF VARIANCE
GROUP BY CONTENT

Source of Variation	DF	Sum of Squares	Mean Squares	F-ratio	F Prob.
Group	1	4.627	4.627	7.869	.006
Content	1	.214	.214	.364	.548
Group x Content	1	.926	.926	1.575	.213
Residual	78	45.864	.588		
Total	81	51.512	.636		

TABLE 8

PEOPLE PICTURES
UNFAVORABLE SUBSCALE MEANS
BY CONDITION

		Individualistic	Cooperative
Systems	1.1	1.2	
	$\bar{X} = 15.842$	$\bar{X} = 14.000$	
	N = 19	N = 21	
Laidlaw	2.1	2.2	
	$\bar{X} = 16.522$	$\bar{X} = 12.421$	
	N = 23	N = 19	

Total N = 82

INSERT Tables 9 & 10 about here

A multivariate analysis of variance was considered and run on eight dependent variables. However, due to poor within-cell correlations (at the .31 level or lower), further interpretation of results was determined to be unwarranted.

Limitations

In drawing conclusions relative to the results of this study, the following limitations must be considered:

- (1) The study was confined to one city school and one grade level.
- (2) The study employed a specific curriculum which has not been shown to be effective in any other empirical study.
- (3) One of the two primary instruments used to measure treatment effects in this study was designed specifically for use in this study and was used on the basis of preliminary reliability and validity checks.
- (4) Both independent variables implemented in this study were done so in a highly structured manner and should be extended with caution.

TABLE 9

CLASSROOM LIFE: COOPERATIVE
TWO-WAY ANOVA INTERACTION GRAPH
GROUP BY CONTENT

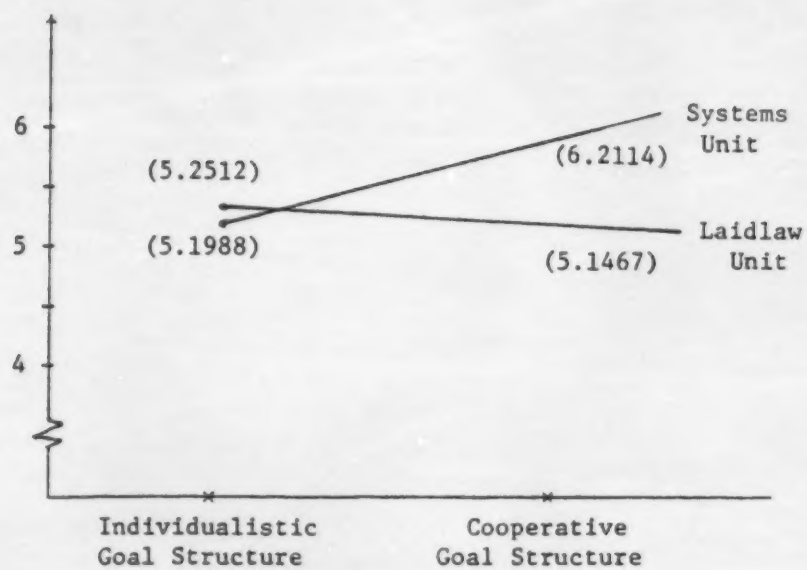
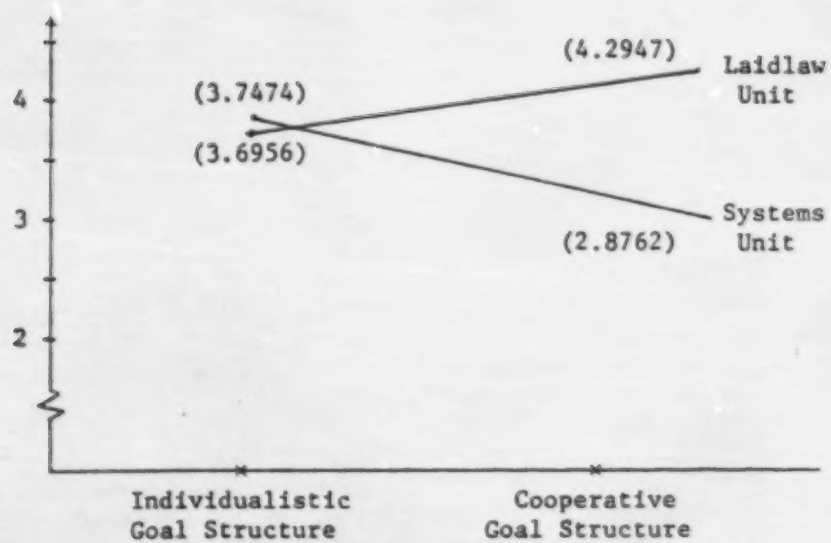


TABLE 10

CLASSROOM LIFE: INDIVIDUALISTIC
TWO-WAY ANOVA INTERACTION GRAPH
GROUP BY CONTENT



- (5) Students were randomly assigned to conditions without regard for sex or ability levels or other such variables.
- (6) The definitions in this study, although carefully derived, are very specific and may not be generally suitable in another context.
- (7) The total amount of time in this study was relatively short. Students were in condition for 18 days for a total of 15 hours.

Conclusions

Keeping in mind these limitations, and recalling the four components of the definition of interdependence, one can draw the following conclusions about the study:

- (1) A systems interdependence focus is an effective way to teach about interdependence, both in terms of factual knowledge and specific skills (technical systems) and in terms of the development of certain attitudes about the efficacy of working in and viewing the world as a systems complex (ideological systems).
- (2) Cooperative goal structures are an effective teaching strategy for global education activities. Based on the results obtained in this study, cooperatively interdependent learning experiences enhance one's understanding of the concept itself.

- (3) The combination of systems content and cooperative goal structures has an additive effect on student performance relative to measures of interdependence. In numerous instances, whether significant interaction effects were present or not, the cell means for students in condition 1.2 were higher than for any other group.
- (4) In support of the contention that a two-level definition of interdependence (e.g., technical, ideological) is a requisite for an effective social studies concept definition, it can be concluded that the combination of curriculum and goal structure allows both content and values to be taught simultaneously.
- (5) The non-textbook, activities-based systems unit was an effective style for teaching the concept of interdependence. Students actively manipulated their environment both in the concrete sense as well as in the more complex sense of play-acting and simulation. Activity and participation predominated. Little written material was used.
- (6) Based on the results obtained in the study, it can be stated that the definition itself, as developed for this study, was an effective, viable construct upon which to base the study.

- (7) Measures of Interdependence worked well for a first generation test as an indicator of attainment of the concept of interdependence. The test appeared to be particularly good at picking up a student's understanding of systems and how they work and the further application of that knowledge to a world systems perspective.
- (8) Finally, based on data obtained from the study, it can be concluded that sixth grade students are capable of both learning and applying a working knowledge of interdependence as that term is defined in this study.

Implications

Given the results obtained in the study, the acknowledged limitations of the study and the conclusions stated above, several important implications for education emerge which are considered below:

- (1) This study supports earlier research in global education (such as Mitsakos, 1976, 1979 and Berg, 1971) and more general research in the areas of worldmindedness and political attitudes (Lambert and Klineberg, 1967 and Hess and Torney, 1967) that establishes an appropriate age range for learning about global education topics such as interdependence. The implication for

elementary social studies is that upper elementary grades are an appropriate location for this curricular focus in terms of student readiness and receptivity.

- (2) This study supports earlier research which states simply that a global education project can make a difference (Mitsakos, 1976 and 1979). If carefully sequenced and structured, even an activity-oriented, experiential-type unit can have an expected, measurable outcome. The implication for elementary social studies is twofold. First, the importance of sequence and structure is stressed. Frequently, social studies is either extremely textbook oriented in an attempt to achieve measurable outcomes or, if not too structured, is too loose to measure. Second, then, is the payoff for sequence and structure - accountability can be obtained. And this accountability need not be at the expense of motivating, experiential learning.
- (3) The conclusions reached in this study point out the importance and viability of matching curriculum with appropriate goal structures to achieve maximum effect. The implication for elementary social studies is that teachers need to pay some attention to both aspects

of the learning environment. More specifically, cooperative goal structures seem particularly well-suited to the social studies learning attempted in this study.

- (4) A final observation is that this study provides a model for concept development and for the learning of concepts on both the level of knowledge and skills (cognitive) and on the level of attitudes and values (affective). The implication for elementary social studies education is that concepts can be specified, taught and measured. Further, these concepts can be defined as working definitions which ultimately provide the student with learning that can be applied.

Suggestions for Future Research

While this present study has begun to establish the viability of certain classroom strategies such as concept definition, curricular approaches and student goal structures, the experimenter believes the study needs to be replicated along several dimensions:

- (1) The time frame for this study was quite short. The study should be tried for longer periods of time.
- (2) The study should be replicated using different grade levels in an effort to determine a maximal

age for attainment of the concept in question.

- (3) Replications should occur with different socio-economic groups to compare readiness and receptivity of various student populations.
- (4) The definition of interdependence as used in this study may not meet the needs of social studies educators as the field of global education continues to develop. This definition should be re-worked and refined so the core concept of interdependence can become an established standard by which to measure global perspectives.
- (5) The test Measures of Interdependence should be subjected to item analysis and systematic development so that future researchers have a viable instrument by which to measure the concept. Other tests and combinations of tests should be tried in an effort to achieve maximum correlation of measures and to further refine data collection.
- (6) While the systems material seems to work well as a unit of study, other lessons and sequences of lessons should be explored to determine the strongest possible combination of content and structure in the curriculum.
- (7) Sex and ability variables should be explored in future research to determine what combinations

of variables beyond just content and goal structure serve to enhance the development of global perspectives.

- (8) In general, further research is necessary to determine more precisely the nature of the relationship of systems to interdependence and of cooperation to interdependence.
- (9) As reported in this study, ethnocentrism measures and interdependence measures appear to have little relation to each other. This linkage, which appears to be a natural one at first glance, should be explored to determine whether an understanding of interdependence necessarily predisposes one in one direction or the other relative to ethnocentric views.
- (10) Finally, the suggestion, based on evidence obtained from the general descriptors subscale of People Pictures that cooperatively grouped students use more general descriptors, is an interesting one. Does cooperation group work help students develop a sense of relativism? Does cooperative group work help students develop a tolerance for others?

Closing

This study has attempted to answer many questions. The need for answers is certain as we move into an age of increasingly complex and critical interdependence. It is hoped that this study can provide some clues, shed some light. Moreover, it is hoped that this work can contribute to the understanding of people and their relationships with each other and with their world.

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